

instruction set of the power adapter, and instructions of the quick charging communication instruction set have the same previous n bits.

**[0065]** Optionally, in an embodiment, each clock period of the clock signal includes a low level of 10 us and a high level of 500 us.

**[0066]** Optionally, in an embodiment, the first data line is a D+ data line of the USB interface, and the second data line is a D- data line of the USB interface.

**[0067]** The above description in combination with FIG. 1 describes the quick charging method of the embodiments of the present disclosure executed by the power adapter. The following description in combination with FIG. 2 will describes the quick charging method of the embodiments of the present disclosure executed by the mobile terminal.

**[0068]** It can be understood that interaction and relevance properties and functions of the power adapter and the mobile terminal described in the quick charging method executed by the mobile terminal corresponds to the description of the quick charging method executed by the power adapter. For simplicity, repeated description will be omitted appropriately.

**[0069]** FIG. 2 is a schematic flow chart of a quick charging method in accordance with an embodiment of the present disclosure. The method illustrated in FIG. 2 is applied to a mobile terminal. The mobile terminal is coupled to a power adapter via a USB interface. A power line of the USB interface is used for the power adapter to charge the mobile terminal. The mobile terminal supports a normal charging mode and a quick charging mode, and a charging current corresponding to the quick charging mode is greater than a charging current corresponding to the normal charging mode. The method of FIG. 2 includes the following.

**[0070]** At block 210, the mobile terminal receives clock signal from the power adapter via a first data line of the USB interface in a process of that the mobile terminal is coupled to the power adapter, and the clock signal is used to indicate a communication sequence between the mobile terminal and the power adapter.

**[0071]** At block 220, the mobile terminal conducts a bidirectional communication with the power adapter via a second data line of the USB interface under control of the communication sequence, so as to cause the power adapter to determine to charge the mobile terminal in the quick charging mode.

**[0072]** At block 230, the mobile terminal receives the charging current corresponding to the quick charging mode from the power adapter to charge a battery of the mobile terminal.

**[0073]** In embodiments of the present disclosure, the power adapter does not increase the charging current blindly to implement quick charging, but negotiates with the mobile terminal via the bidirectional communication with the mobile terminal to determine whether or not the quick charging mode can be adopted. Comparing with related arts, the security of the quick charging process is improved.

**[0074]** Optionally, in an embodiment, the communication sequence includes instruction reception time slots of the mobile terminal and instruction transmission time slots of the mobile terminal, and the instruction reception time slots and the instruction reception time slots are alternatively

generated. Conducting, by the mobile terminal, the bidirectional communication with the power adapter via a second data line of the USB interface under control of the communication sequence to cause the power adapter to determine to charge the mobile terminal in the quick charging mode includes: receiving, by the mobile terminal, a first instruction from the power adapter via the second data line during the instruction reception time slot of the mobile terminal, wherein the first instruction is used to query the mobile terminal for whether or not to activate the quick charging mode; transmitting, by the mobile terminal, a reply instruction corresponding to the first instruction via the second data line during the instruction transmission time slot of the mobile terminal, wherein the reply instruction corresponding to the first instruction is used for indicating that the mobile terminal agrees to activate the quick charging mode.

**[0075]** Optionally, in an embodiment, the instruction reception time slot of the mobile terminal includes a number of clock periods, and each clock period is used for receiving a 1-bit data.

**[0076]** Optionally, in an embodiment, the instruction reception time slot of the mobile terminal includes eight clock periods, and the first instruction includes a 8-bit data.

**[0077]** Optionally, in an embodiment, the instruction transmission time slot of the mobile terminal includes a number of clock periods, and each clock period is used for transmitting 1-bit data.

**[0078]** Optionally, in an embodiment, the instruction transmission time slot of the mobile terminal includes ten clock periods, and the reply instruction corresponding to the first instruction includes a 10-bit data.

**[0079]** Optionally, in an embodiment, the reply instruction corresponding to the first instruction is an instruction of the quick charging communication instruction set of the mobile terminal, and instructions of the quick charging communication instruction set have the same previous n bits.

**[0080]** Optionally, in an embodiment, each clock period of the clock signal includes a low level of 10 us and a high level of 500 us.

**[0081]** Optionally, in an embodiment, the first data line is a D+ data line of the USB interface, and the second data line is a D- data line of the USB interface.

**[0082]** The following will describe embodiments of the present disclosure more specifically in combination with detailed examples. It should be noted that examples illustrated in FIGS. 3-5 are just used to help those skilled in the art to understand the embodiments of the present disclosure, and not used to limit the embodiments of the present disclosure to detailed values or detailed scenarios which are shown in the examples. Apparently, those skilled in the art can make various equivalent modification or change according to the examples shown in FIGS. 3-5, and such modification or change shall fall within the scope of the embodiments of the present disclosure.

**[0083]** Firstly, the quick charging communication instruction set of the power adapter and the mobile terminal can be defined. For example, the quick charging communication instruction set is shown in the table 1.